

10/049484

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Atty. Ref.: EPARK-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : e.PARK Systems LLC
International Appl. : PCT/US00/22856
International Filing Date : 19, January 2000
Title of Invention : APPARATUS FOR ELECTRONIC PARKING
SYSTEM

U.S. Patent and Trademark Office
P.O. Box 2327
Arlington, VA 22202

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Sir:

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Hilda A. Abreu



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PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE
in its capacity as elected Office

Date of mailing (day/month/year)

07 May 2001 (07.05.01)

International application No.

PCT/US00/22856

Applicant's or agent's file reference

EPARK-1-PCT

International filing date (day/month/year)

21 August 2000 (21.08.00)

Priority date (day/month/year)

19 August 1999 (19.08.99)

Applicant

IVERS, Kevin

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

15 March 2001 (15.03.01)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

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Authorized officer

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PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 18 DEC 2001

IPO

PCT

12

| | | |
|--|--|--|
| Applicant's or agent's file reference EPARK-1-PCT | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/US00/22856 | International filing date (day/month/year) 21 AUGUST 2000 | Priority date (day/month/year) 19 AUGUST 1999 |
| International Patent Classification (IPC) or national classification and IPC IPC(7): G07B 15/00 and US Cl.: 705/418; 705/13 | | |
| Applicant E.PARK SYSTEMS LLC | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets.
☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

| | |
|--|---|
| Date of submission of the demand 15 MARCH 2001 | Date of completion of this report 05 NOVEMBER 2001 |
| Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 | Authorized officer EDWARD R COSIMANO |
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/22856

I. Basis of the report

1. With regard to the elements of the international application:*

☐ the international application as originally filed☒ the description:pages 1-34 , as originally filedpages NONE , filed with the demandpages NONE , filed with the letter of _____☒ the claims:pages 35-38 , as originally filedpages NONE , as amended (together with any statement) under Article 19pages 39-41 , filed with the demandpages NONE , filed with the letter of _____☒ the drawings:pages 1-8 , as originally filedpages NONE , filed with the demandpages NONE , filed with the letter of _____☒ the sequence listing part of the description:pages NONE , as originally filedpages NONE , filed with the demandpages NONE , filed with the letter of _____2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☒ The amendments have resulted in the cancellation of:☒ the description, pages NONE☒ the claims, Nos. None☒ the drawings, sheets/fig NONE5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

**Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. statement**

| | | | |
|-------------------------------|--------|--------------------------------|-----|
| Novelty (N) | Claims | <u>1-33</u> | YES |
| | Claims | <u>NONE</u> | NO |
| Inventive Step (IS) | Claims | <u>11, 12, 16 & 24-33</u> | YES |
| | Claims | <u>1-10, 13-15 & 17-23</u> | NO |
| Industrial Applicability (IA) | Claims | <u>1-33</u> | YES |
| | Claims | <u>NONE</u> | NO |

2. citations and explanations (Rule 70.7)

1. Claims 1-10, 13-15 & 17-23 lacks an inventive step under PCT Article 33(3) as being obvious over either Tomer (4,717,815) or Haung (4,847,776) in view of the article "A Meter That Can't be Beat".

1.1 In regard to claims 1, 2 & 17-19, either Tomer ('815) or Haung ('776) disclose an electronic parking system that is to be used with in a vehicle and must be visible from without the vehicle. The parking system of either Tomer ('815) or Haung ('776) include a housing that encases a microprocessor/controller, a display device, and at least one monetary switch. Further, both Tomer ('815) and Haung ('776) require the accurate keeping of time. To provide this time signal, either Tomer ('815) nor Haung ('776) disclose the use of a crystal electrically coupled to the microprocessor/controller, (Tomer ('815) dice 60 in fig. 2 and Haung ('776) at column 3, lines 2-9).

1.2 Neither Tomer ('815) nor Haung ('776) disclose the use of a battery to power the parking meter. However, the article "A Meter That Can't be Beat" discloses the use of a battery to provide operating power to the disclosed parking meter. Since, either Tomer ('815) or Haung ('776) require a source of operating power, it would have been obvious to one of ordinary skill at the time the invention was made that the parking systems of either Tomer ('815) or Haung ('776) could be powered by a battery.

1.3 In regard to claims 3 & 20-22, neither Tomer ('815) nor Haung ('776) disclose the use of an optical/infrared communications device for communicating information between the meter and an external device. However, the article "A Meter That Can't be Beat" discloses the use of an external device to extract parking information from the parking meter. Such a system as is common would include a transmitting device and a receiving device. When a vehicle using the meter departs the meter the article "A Meter That Can't be Beat" discloses the accurate determination and recording of parking revenue and parking time for each vehicle using the metering device. This information is the downloaded from the meter to be analyzed and produce reports. Since, it is (Continued on Supplemental Sheet.)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/22856

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

1. The drawings are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or content thereof:
 - 1.1 as disclosed at page 11, line 7, fig. 8 lacks "New Day Delineation Hour (58)".
 - 1.2 applicant must use reference numbers when describing figures 7 & 9.
 - 1.3 the subject matter of claim 14 in regard to either (A) the motion detecting means or (B) a flow chart indicating the automatically terminating active parking, is not depicted in the drawings.
2. The description is objected to as containing the following defect(s) under PCT Rule 66.2(a)(iii) in the form or contents thereof:
 - 2.1 as can be seen in fig. 1, at page 9, line 7, "RAM 24" should be --ROM 24--.
 - 2.2 the description of fig. 4 at pages 12-14 lacks an explicit reference to reference numbers 100, 102, 104, 105, 110, 112, 114, 118, 120, 122, 124, 128, 130 & 132.
 - 2.3 the description of fig. 4 at pages 12-14 lacks an explicit reference to how the program proceeds after boxes 102, 110, 114, 118, 122 & 130 if the inquiry is either "YES" or "NO".
 - 2.4 the description of fig. 4 at pages 12-14 lacks an explicit reference to how the program proceeds after box 106 if the inquiry is "YES".
 - 2.5 the disclosure lacks an explicit reference to fig. 5 as this figure is described at pages 14-20.
 - 2.6 the disclosure lacks an explicit reference to fig. 6 as this figure is described at pages 20-21.
 - 2.7 the disclosure lacks both an explicit reference to fig. 7 as well as a description of this figure that uses the reference numbers requested above in section 1.2 and references each of the depicted flow paths.
 - 2.8 the description of fig. 9 at pages 28-30 lacks an explicit reference to reference numbers requested above in section 1.2.

(Continued on Supplemental Sheet.)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/22856

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. Claim 29 is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because the claim 29 is indefinite for the following reason(s):

1.1 Applicant's use of the word "potable" at claim 29, line 1, is confusing since from the context of this claim this word could be either —potable— or —portable—.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):

desirable to prevent the theft of parking time, it would have been obvious to one of ordinary skill at the time the invention was made that the parking systems of either Tomer ('815) or Haung ('776) could be modified to include a suitable communication method as taught by the article "A Meter That Can't be Beat".

1.4 In regard to claims 4-10 & 15, it is noted that computers include the use the components recited in these claims in one form or another. Hence, it would have been obvious to one of ordinary skill at the time the invention was made that the parking systems of either Tomer ('815) or Haung ('776) as modified by the article "A Meter That Can't be Beat" would contain suitable components to carry out the desired functioning of a parking system.

1.5 In regard to claim 14, neither Tomer ('815) nor Haung ('776) disclose the use of a motion detector to terminate the meter timing of a parking interval when motion has been detected. However, the article "A Meter That Can't be Beat" discloses the use of a motion detector to terminate the meter timing of a parking interval when motion has been detected. By terminating the timing of a parking interval in this manner the permits an accurate determination of parking revenue and parking time for each vehicle using the metering device. Hence, it would have been obvious to one of ordinary skill at the time the invention was made that the parking systems of either Tomer ('815) or Haung ('776) could be modified to use a motion detector to terminate the meter timing of a parking interval when motion has been detected as taught by the article "A Meter That Can't be Beat".

1.5 In regard to claim 23, since it is undesirable in the meter system of either Tomer ('815) or Haung ('776) as modified by the article "A Meter That Can't be Beat" to lose or corrupt the parking data, it would have been obvious to one of ordinary skill at the time the invention was made that the meter system of either Tomer ('815) or Haung ('776) as modified by the article "A Meter That Can't be Beat" would include a means to prevent corruption of that meter's data during the downloading process.

3. Claims 11, 12, 16 & 24-33 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest:

A) in regard to claim 11, the use of temperature sensing device formed from a NTC thermistor, and a capacitor and resistor connected in parallel. Claim 12 meets the criteria set out in PCT Article 33(2)-(4) for the same reason.

B) in regard to claims 16 & 27, the use of a display that includes a corner cube to reflect light back to it's source. Claims 28 & 29 meet the criteria set out in PCT Article 33(2)-(4) for the same reason.

C) in regard to claim 24, the location of the transceiver in a parking facility.

D) in regard to claim 25, the transceiver wirelessly transmitting data from a parking facility.

E) in regard to claim 30, the use of crypto-grade random number generator to generate codewords used to program a parking meter. Claims 31-33 meet the criteria set out in PCT Article 33(2)-(4) for the same reason.

----- NEW CITATIONS -----

NONE

VII. CERTAIN DEFECTS IN THE APPLICATION (Continued):

2.9 the description of fig. 9 at pages 28-30 lacks an explicit reference to how the program proceeds after the decision box if the inquiry is either "YES" or "NO".

2.10 The use of various trademark(s) at pages 31-32 has been noted in this application. Any trademarks should be capitalized wherever they appear and be accompanied by the generic terminology.

2.10.1 Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

2.11 the disclosure lacks an explicit reference to figs. 11A & 11B as these figures are described at pages 31-32.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/22856

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 11

2.12 the disclosure lacks an explicit reference to fig. 12 as this figure is described at pages 32-33.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/22856

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :G07B 15/00

US CL :705/418; 705/13

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 340/932.2; 368/7, 90; 705/13, 50, 60, 61, 77, 400, 417, 418

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NoneElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)
None**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| Y | US 4,717,815 A (TOMER) 05 January 1988, see abstract. | 1-21 & 25-28 |
| Y | US 4,847,776 A (HUANG) 11 July 1989, see abstract. | 1-21 & 25-28 |
| A | FR 2637999 A1 (SAGLIO et al) 20 April 1990, see abstract. | 1-21 & 25-28 |
| A | US 5,309,414 A (CHIU) 03 May 1994, see abstract. | 1-21 & 25-28 |
| A | JP 07-210716 (NAKAI) 11 August 1995, see constitution. | 1-21 & 25-28 |
| A | US 5,442,348 A (MUSHELL) 15 August 1995, see abstract. | 1-21 & 25-28 |

☒ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

| | |
|---|--|
| * Special categories of cited documents: | *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention |
| *A* document defining the general state of the art which is not considered to be of particular relevance | *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone |
| *E* earlier document published on or after the international filing date | *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | *G* document member of the same patent family |
| *O* document referring to an oral disclosure, use, exhibition or other means | |
| *P* document published prior to the international filing date but later than the priority date claimed | |

Date of the actual completion of the international search
23 OCTOBER 2000

Date of mailing of the international search report

18 DEC 2000

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/22856

| C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|---|---|-----------------------|
| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| Y | "A METER THAT CAN'T BE BEAT": Advanced Transportation Technology News; 01 May 1996, v3, n1, see lines 1-28. | 1-21 & 25-28 |
| A | US 5,642,119 A (JACOBS) 24 June 1997, see abstract. | 1-21 & 25-28 |
| A | US 5,648,906 A (AMIRPANAHI) 15 July 1997, see abstract. | 1-21 & 25-28 |
| A, P | US 6,102,285 A (ELIAS) 15 August 2000, see abstract. | 1-21 & 25-28 |

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/22856

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 22-24
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
 - 2.1 This application contains two different claims numbered as claim 22.
 - 2.2 Since there are two claims numbered as 22, the scope of claims 23 & 24, which depend from claim 22 can not be determined.

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

21. A system as in claim 20, wherein said second data transferring means of said transceiver comprises a high power infrared light emitting diode and a phototransistor for sending and receiving data from said first transferring means of said in-car parking meter.

5 22. A system as in claim 21, wherein said transceiver is portable, said transceiver being carried by a parking enforcement official to read data from said in-car parking meter.

22. A system as in claim 21, wherein said transceiver is formed to receive said in-car parking meter as to block ambient light during communication
10 between said first transferring means and said second transferring means.

23. A system as in claim 22, wherein said transceiver is positioned at an entrance to a parking facility.

24. A system as in claim 23, wherein said transceiver wirelessly transmits data from said parking facility to a remote location.

15 25. A system as in claim 19, wherein said display means is a liquid crystal display including a controllable segment, said segment allows light to pass through said display means when off and blocks light when said segment is on.

26. A system as in claim 25, further comprising a corner cube to reflect light back to its source, said corner cube being disposed behind said segment of said
20 display means, whereby upon light being directed at said corner cube said segment will be turned on and off to passively transmit data from said in-car parking meter.

27. A system as in claim 26, further comprising an external receiver, said external receiver comprising a light point source and a photodetector which when directed toward said in-car parking meter passively receives information from said in-
25 car parking meter.

28. A system as in claim 27, wherein said external receiver is portable, said external receiver being carried by a parking enforcement official to read data from said in-car parking meter.

29. A method of generating codewords to program an electronic apparatus with monetary credits, said method comprising the steps of:

generating a serial number associated with said electronic apparatus;

providing a hardware based crypto-grade random number generator;

5 generating a first random number table from said crypto-grade random number generator;

generating a second random number table from said crypto-grade random number generator;

10 indexing said serial number to a first entry in said first random number table and to a second entry in said second random number table;

summing said first entry and said second entry resulting in a hexadecimal sum; and

converting said hexadecimal sum into a first seven digit binary coded decimal value codeword.

15 30. The method of claim 29, further comprising the step:

providing a second seven digit binary coded decimal codeword whereby said second codeword validates said first codeword.

20 31. The method as in claim 30, further comprising the step of providing a storage means for storing a plurality of codewords, said storage means comprises a microprocessor and non-volatile memory.

32. The method as in claim 31, further comprising the step of providing a block access code for allowing access to said plurality of codewords.

AMENDED CLAIMS

[received by the International Bureau on 17 January 2001 (17.01.01);
original claims 22-32 replaced by new claims 22-33 (3 pages)]

21. A system as in claim 20, wherein said second data transferring means of said transceiver comprises a high power infrared light emitting diode and a phototransistor for sending and receiving data from said first transferring means of said in-car parking meter.

5 22. A system as in claim 21, wherein said transceiver is portable, said transceiver being carried by a parking enforcement official to read data from said in-car parking meter.

 23. A system as in claim 21, wherein said transceiver is formed to receive said in-car parking meter as to block ambient light during communication
10 between said first transferring means and said second transferring means.

 24. A system as in claim 23, wherein said transceiver is positioned at an entrance to a parking facility.

 25. A system as in claim 24, wherein said transceiver wirelessly transmits data from said parking facility to a remote location.

15 26. A system as in claim 19, wherein said display means is a liquid crystal display including a controllable segment, said segment allows light to pass through said display means when off and blocks light when said segment is on.

 27. A system as in claim 26, further comprising a corner cube to reflect light back to its source, said corner cube being disposed behind said segment of said
20 display means, whereby upon light being directed at said corner cube said segment will be turned on and off to passively transmit data from said in-car parking meter.

 28. A system as in claim 27, further comprising an external receiver, said external receiver comprising a light point source and a photodetector which when directed toward said in-car parking meter passively receives information from
25 said in-car parking meter.

29. A system as in claim 28, wherein said external receiver is portable, said external receiver being carried by a parking enforcement official to read data from said in-car parking meter.

30. A method of generating codewords to program an electronic apparatus with monetary credits, said method comprising the steps of:

generating a serial number associated with said electronic apparatus;

providing a hardware based crypto-grade random number generator;

5 generating a first random number table from said crypto-grade random number generator;

generating a second random number table from said crypto-grade random number generator;

10 indexing said serial number to a first entry in said first random number table and to a second entry in said second random number table;

summing said first entry and said second entry resulting in a hexadecimal sum; and

converting said hexadecimal sum into a first seven digit binary coded decimal value codeword.

15 31. The method of claim 30, further comprising the step:

providing a second seven digit binary coded decimal codeword whereby said second codeword validates said first codeword.

20 32. The method as in claim 31, further comprising the step of providing a storage means for storing a plurality of codewords, said storage means comprises a microprocessor and non-volatile memory.

33. The method as in claim 32, further comprising the step of providing a block access code for allowing access to said plurality of codewords.